CLAIMS

What is claimed is:

1. A method for measuring the electromotive force constant of a motor, comprising steps of:

   enabling the motor to rotate in single phase mode;

5   measuring phase voltages of the motor when the motor rotates to a predetermined velocity; and

   obtaining the electromotive force constant of the motor according to the relationship of the phase voltages and the predetermined velocity.

2. The method of claim 1, wherein the motor comprises a three-phase permanent magnet
10   motor.

3. The method of claim 2, wherein one phase of the motor is open, and the other two phases are connected in series.

4. The method of claim 1, wherein the relationship of the phase voltages and the

   predetermined velocity is $v_\omega(t) = K_{emax} \cos\left(\theta_r + \frac{2\pi}{3}\right)\omega_r = \left(\frac{v_a + v_b - 2v_c}{-3}\right)\left(\frac{P}{2}\right)$, wherein
15   v_a, v_b, v_c are the phase voltages of the motor, ω_r is the velocity of the motor, K_{emax} is the electromotive force constant of the motor, θ_r is the electrical angle of the rotator of the motor, P is the number of the magnetic pole of the rotator magnet.

5. The method of claim 4, wherein the velocity of the motor is output from a velocity encoder.

20 6. The method of claim 4, wherein the electromotive force is the accelerating current peak value of the integral of the relationship of the phase voltages and the predetermined velocity.

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7. The method of claim 1, wherein the single phase mode is driven by a three-phased driver.

8. The method of claim 7, wherein the driver continues providing currents when the motor rotates to the predetermined velocity.

9. The method of claim 7, wherein the driver stops providing currents when the motor rotates to the predetermined velocity.

10. The method of claim 1, wherein the single phase mode is driven by a one-phased driver.

11. The method of claim 10, wherein the driver continues providing currents when the motor rotates to the predetermined velocity.

12. The method of claim 10, wherein the driver stops providing currents when the motor rotates to the predetermined velocity.